

ATTACHMENT 4. BUDGET

Attachment 4 includes the following items:

- **Project Budget** – This table summarizes project cost estimates for the grant funds requested, fund matching and percent of fund matching to perform the work detailed in the Work Plan provided in Attachment 3 within the Schedule identified in Attachment 5. Note that only one project is proposed in this proposal.
- **Budget Summary** – This table summarizes the proposal cost estimates for the grant funds requested, fund matching and percent of fund matching to perform the work detailed in the Work Plan provided in Attachment 3 within the Schedule identified in Attachment 5.
- **Consultant Fee Category Description** – This section describes the fee categories used in the project cost breakdown.
- **Project Cost Breakdown Detail** – This section provides the backup data for the project budget and budget summary.

Table 7 - Project Budget

Proposal Title: Water Supply Stabilization Project No. 2

Project Title: Water Supply Stabilization Project No. 2

		(a)	(b)	(c)	(d)	(e)
	Budget Category	Non-State Share* (Funding Match)	Requested Grant Funding	Other State Funds Being Used	Total	% Funding Match
(a)	Direct Project Administration Costs	\$335,600	\$0	\$0	\$335,600	100%
(b)	Land Purchase/Easement	\$127,540	\$0	\$0	\$127,540	100%
(c)	Planning/Design/Engineering/ Environmental Documentation	\$2,220,252	\$0	\$0	\$2,220,252	100%
(d)	Construction/Implementation	\$19,823,400	\$6,000,000	\$0	\$25,823,400	77%
(e)	Environmental Compliance/ Mitigation/Enhancement	\$100,000	\$0	\$0	\$100,000	100%
(f)	Construction Administration	\$1,219,760	\$0	\$0	\$1,219,760	100%
(g)	Other Costs	\$0	\$0	\$0	\$0	0%
(h)	Construction/Implementation Contingency	\$7,747,020	\$0	\$0	\$7,747,020	100%
(i)	Grand Total (Sum rows (a) through (h) for each column)	\$31,573,572	\$6,000,000	\$0	\$37,573,572	84%

(b) Land purchase total does not include costs prior to September 2008.

(h) Contingency is 30% of total Construction / Implementation cost. This recommendation is based on a Class 4 estimate as defined by the Association for the Advancement of Cost Engineering (AACE).

<p>Table 8 - Summary Budget</p> <p>Proposal Title: Water Supply Stabilization Project No. 2</p>						
Individual Project Title		Non-State Share (Funding Match)	Requested Grant Funding (DWR Grant Amount)	Other State Funds Being Used	Total	% Funding Match
(a)	WSSP-2	\$31,573,572	\$6,000,000	\$0	\$37,573,572	84%
(i)	Grand Total (Sum rows (a) through (h) for each column)	\$31,573,572	\$6,000,000	\$0	\$37,573,572	84%

CONSULTANT FEE CATEGORY DESCRIPTION

The consultant fee categories can be described as follows:

- **Principal Engineer:** A senior member of the consultancy with responsibility for overall direction of the task and coordination with AVEK.
- **Senior Engineer II:** A senior staff member of the consultant firm responsible for the day-to-day execution of the work associated with each task.
- **Senior Engineer I:** A mid-level staff member of the consultant firm with specialized knowledge or expertise in a given area needed to ensure the quality completion of a particular task.
- **Associate Engineer:** A junior-to-mid level staff member of the consultant firm responsible for the compilation, review, and analysis of significant quantities of data and information under the direction of senior and principal engineers.
- **Assistant Engineer:** A junior level staff member of the consultant firm under the direction of associate, senior, and principal engineers.
- **Construction Observer:** A staff member of the consultant firm responsible for direct on-site construction observation during construction.
- **CADD Supervisor:** A senior level staff member of the consultant firm responsible for drafting construction plans and exhibits under the direction of senior and principal engineers.
- **CADD Operator:** A junior level staff member of the consultant firm responsible for drafting of construction plans and other exhibits under the direction of the CADD Supervisor.
- **Clerical:** Support staff utilized to prepare reports and graphics for delivery to AVEK, DWR, and the contractor. Also, administrative staff is utilized in the preparation of invoices and progress reports.
- **Non-Labor Fee:** These are direct project costs associated with travel costs (e.g. mileage to and from meetings and project sites), the costs of reproduction (e.g. printing reports, construction plans and specifications), and the cost of specialized subconsultants (e.g. surveyor, geotechnical engineer). Mileage between most consultant offices to the Antelope Valley are approximately 70-80 miles each way and are charged at the current IRS rate (currently \$0.50/mile). Reproduction costs are assumed to be between \$0.50 and \$1.00 per page for printing.

PROJECT COST BREAKDOWN DETAIL

The following is a detailed explanation for the estimation of cost for each of the tasks outlined in Attachment 3.

Budget Category (a): Direct Project Administration Costs

Task 1.1– Project Management

It is assumed that the project manager will be a principal engineer and spend, on average, 2.5 hours per week for the first 120 weeks of the project (design and construction). It is assumed that the year-long monitoring and assessment period will require 1.5 hours per week. Combining the design and construction hours (300) with the monitoring and assessment hours (78) the total number of hours for this task is estimated to be 378 hours.

Task 1.2 – Labor Compliance Program

A consultant will be hired to implement the labor compliance program. The cost to implement the program for the engineering and design phases of the project is estimated to be \$10,000. The construction of the facilities is assumed to be broken into two separate contracts based upon the type of work to be performed; recharge basin grading, recovery wells, transmission pipeline, and pump station. It is assumed that it will cost \$100,000 per construction contract to implement the labor compliance program. Based on this, it is estimated that the total cost to implement the labor compliance program is \$210,000.

Task 1.3 – Reporting

A consultant will be hired to generate the required reporting as part of the grant. It is estimated this service will cost \$50,000.

Budget Category (b): Right of Way/Easement Plan

Based upon the 10% preliminary design, which has already been completed, it is estimated that the proposed transmission pipeline will require easements across 8 parcels of land in Los Angeles County and none in Kern County. The following tasks describe the work to be done to obtain easements for those properties. Both the recharge basin and pump station properties are already owned by AVEK.

Task 2.1 - Preparation of Legal Descriptions

It is assumed that to create each plat and legal description will take 2 hours of principal time, 4 hours of senior time, 16 hours of associate time, 16 hours of drafting, and 2 hours of clerical. Printing and delivery costs associated with each easement are assumed to be \$100 per easement.

Task 2.2 - Easement Acquisition

A consultant will be hired to perform appraisals of subject properties and act as a right-of-way agent. It is assumed that the appraisals will cost \$5,000, the right-of-way agent will cost \$20,000, and the cost to acquire the land will be \$60,000.

Please note that AVEK purchased land for both the WSSP2 recharge site and pump station prior to 9/28/2008 and these costs have not been included.

Budget Category (c): Planning/Design/Engineering/Environmental Documentation

Task Group 3 - Project Assessment and Evaluation

Task 3.1 - Records Search

The estimate assumes that the required information is already located in the engineering consultant's office and readily locatable.

Task 3.2 – Topographic Survey

A consultant will be hired to provide aerial photogrammetry and topographic surveys of the surface recharge site, pump station site, and alignment of the transmission pipeline. It is estimated that the survey will cost \$30,000.

Task 3.3 – Geotechnical Analysis

A consultant will be hired to write a soils report which includes recommendations for pipeline (e.g. thrust blocks, trench backfill, and corrosion investigation), pump station and tank foundations, and surface recharge embankment design. It is estimated that the soils report will cost \$60,000.

Task 3.4 - Existing Utilities Search

It is assumed that utility research will consist of contacting all utility companies known to be operating in the general area of the project and requesting as-built plans or atlas maps showing the location of existing facilities and visiting the sites to search for evidence of utilities in the field. To research and contact the utility companies it is estimated that it will take 24 hours of associate time, 8 hours of senior time, 2 hours of principal time, and 4 hours of clerical time. Printing and mailing costs for utility company contact is estimated to be \$200. To visit the projects sites it is estimated to take 12 hours for an associate, senior, and principal engineer. Travel expenses are assumed to be \$200.

Task 3.5 - Operational Plan and Hydraulic Analysis

The hours estimated to create the operational plan and hydraulic analysis is shown in the detail project budget.

Task 3.6 – Feasibility Study

This task represents the work that AVEK has done in cooperation with USGS studying the proposed project site since 9/28/2008. The majority of this work was to develop a technical report with USGS that looked at the feasibility of constructing and operating an artificial recharge and storage facility. The report name is “Assessing the Feasibility of Artificial Recharge and Storage and the Effectiveness and Sustainability of Insitu Arsenic Removal in the North Buttes Area of the Antelope Valley” and was completed in 2010. The total cost paid by the Agency from 9/28/2008 to 12/10/2010 is \$686,631.65.

The additional Phase II of this study includes groundwater recharge monitoring and reporting to be completed between 11/1/2010 and 10/31/2014 and is estimated at \$896,700.

Task 4 – Permitting

The hours estimated to obtain the necessary street encroachment, well drilling, and surface recharge permits are shown in the detail project budget.

Task Group 5 – Preparation of Construction Plans and Specifications (Project Design)

The cost associated with the preparation of construction plans and specifications is estimated on a per sheet basis. The cost per sheet varies based upon the type of design work to be done. The total number of sheets for the project is estimated to be 112.

Task 5.1 – Recharge Basin Design

The design of the recharge basins is estimated to be 6 sheets of civil plans. The cost per sheet is estimated to be \$3,600, for an approximate total of \$21,000.

Task 5.2 – Recharge Pipelines Network Design

The design of the recharge pipelines to the basins from the West Feeder Pipeline is assumed to be 5 sheets of plan and profile piping. The cost per sheets is estimated to be approximately \$4,300, for an approximate total of \$21,500.

Task 5.3 - Recovery Well Design

The design of each recovery well is assumed to be the same for all five proposed wells. Because of this the recovery well design, including civil, mechanical, and electrical plans, is estimated to be 14 sheets. The cost per sheet is estimated to be approximately \$3,300, for an approximate total of \$46,400.

Task 5.4 - Recovery Well Pipeline Network Design

The recovery well pipeline network collects water from each of the recovery wells and connects to the transmission main pipeline. It is estimated that 11 sheets of plan and profile piping will be necessary. The cost per sheet is estimated to be approximately \$4,400, for an approximate total of 48,400.

Task 5.5 – Recovered Water Transmission Pipeline Design

The recovery transmission main pipeline extends from the recovery well pipeline network to the pump station, approximately 9 miles away. It is estimated that 33 sheets of plan and profile piping will be necessary. The cost per sheet is estimated to be approximately \$4,400, for an approximate total of \$145,200.

Task 5.6 – Recovered Water Pump Station Design

The pump station is estimated to have 39 sheets across all disciplines for an estimated design cost of approximately \$184,000. This estimate is further detailed below.

Subtask 5.6.1 - Civil Site Design

It is estimated that the civil site design, including the storage tank, disinfection system, pumps, and piping manifold, will consist of 11 sheets. The cost per sheet is estimated to be approximately \$5,500, for an approximate total of 60,500.

Subtask 5.6.2 - Structural Design

It is estimated that the structural design, including tank foundation and general structural details, will consist of 10 sheets. The cost per sheet is estimated to be approximately \$4,300, for an approximate total of 43,000.

Subtask 5.6.3 - Mechanical Design

It is estimated that the mechanical design, which includes the HVAC system and details, will consist of 2 sheets. The cost per sheet is estimated to be approximately \$5,000, for an approximate total of \$10,000.

Subtask 5.6.4 - Electrical Design

It is estimated that the electrical design will consist of 11 sheets. The cost per sheet is estimated to be approximately \$4,300, for an approximate total of \$47,300.

Subtask 5.6.5 - Instrumentation Design

It is estimated that the instrumentation design will consist of 5 sheets. The cost per sheet is estimated to be approximately \$4,500, for an approximate total of \$49,500.

Subtask 5.6.6 - Landscape and Irrigation Design

It is estimated that the landscaping and irrigation design will take a total of 3 sheets, with a cost of approximately \$3,500 per sheet, for an approximate total of \$10,500.

Budget Category (d): Construction/Implementation

Task 6.1 – Construction

The construction cost is estimated from the 10% design already completed by AVEK. See the [Construction/Implementation Cost Estimate](#) for additional detail.

Budget Category (e): Environmental Compliance/Mitigation/Enhancement

Task 7.2 - Implementation of Environmental Mitigation Measures, Monitoring and Assessment

Please note that the CEQA documentation, including mitigated negative declaration, was completed prior to 9/28/2008 and is not included as part of the cost of this project.

The costs associated with implementing the environmental mitigation measures, monitoring, and assessment have been estimated on the project detail budget.

Budget Category (f): Construction Administration

The costs associated with construction administration have been estimated assuming that the project is issued in 2 separate construction contracts.

Task 8.1 - Project Bids Solicitation

It is assumed that the project will be issued in 2 construction contracts. The following table itemizes the estimated cost of bidding assistance per construction contract and provides a total estimation for both contracts.

	Principal Hours	Senior Hours	Associate Hours	CADD Hours	Clerical Hours	Non-Labor Fee
Advertisement*	2				8	\$1,600
Bid Set Duplication**					24	\$5,000
Respond to Questions and Issue Addenda†	16	16	24	16	16	\$2,000
Pre-Bid Meeting	12	12				\$200
Bid Opening	12	12				\$200
Bid Tabulation	2	4	8		40	
Preparation & Review of Contract Documents	4				4	\$100
Conformed Drawings	8	8	16	16	8	\$1,000
Total per Contract	56	52	48	32	100	\$10,500
Total for 2 Contracts	112	104	96	64	200	\$21,000

* Advertisement shall be in both the Bakersfield Californian and Antelope Valley Press.

** Assumes 50 sets of bid documents.

† Assumes issuing 2 addenda.

Task 8.2 – Pre-Construction Meeting

It is assumed that the project will be issued in 2 construction contracts. It is estimated that for each construction contract a pre-construction meeting will take 12 hours of principal engineer time, 12 hours of senior engineer time, and \$200 in mileage and meals.

Task 8.3 – Response to RFI

It is estimated that to respond to each RFI will take 1 hour of principal time, 2 hours of senior time, 4 hours of associate time, 2 hours of clerical time, and \$25 in printing and postage. The number of RFI's for each area of work and the associated hours is estimated in the following table.

	Number of RFI's	Principal Hours	Senior Hours	Associate Hours	Clerical Hours	Non-Labor Fee
Recharge Basins	5	5	10	20	10	\$125
Recovery Wells	20	20	40	80	40	\$500
Transmission Pipeline	10	10	20	40	20	\$250
Pump Station	20	20	40	80	40	\$500
Total	55	55	110	220	110	\$1,375

Task 8.4 – Submittals

It is estimated that to review each submittal will take 4 hours of principal time, 8 hours of senior time, 10 hours of associate time, 2 hours of clerical time, and \$25 in printing and postage. The number of submittals for each area of work and the associated hours is estimated in the following table. Note that work done in the recharge basins is assumed to not have any submittals.

	Number of Submittals	Principal Hours	Senior Hours	Associate Hours	Clerical Hours	Non-Labor Fee
Wells	20	80	160	200	40	\$500
Pipeline	10	40	80	100	20	\$250
Pump Station	10	40	80	100	20	\$250
Total	40	160	320	400	80	\$1,000

Task 8.5 – Construction Observation

Construction observation is estimated per area of work in the following table by days of observation required. A day of observation is assumed to be 12 hours and \$100 for mileage. Engineering hours are estimated to deal with issues in the field not related to the contractor (such as adjacent property owners).

	Days of Observation
Recharge Basin and Recharge Water Pipeline Network	80
Recovery Well and Recovery Collector Pipeline Network	40
Recovery Water Transmission Pipeline	120
Recovered Water Pump Station	100

Task 8.6 – Materials Testing

A consultant will be hired to do testing of soil compaction and concrete compressive strength during construction. The following estimates the cost for testing both of these items.

Compaction Testing Along the Pipeline

The project includes approximately 81,440 ft of transmission, recovery, and recharge pipe. It is assumed that compaction tests will be performed at springline, top of pipe, and pavement zone along each pipe

station (every 100 ft). Using this assumption, it is estimated that there will be approximately 500 compaction tests for the pipeline.

Compaction Testing of the Recharge Basin Roads

The project includes approximately 12,000 feet of maintenance roads that surround the recharge basins. It is assumed that compaction tests will be performed for every 100 feet of road. Using this assumption, it is estimated that 120 tests will be required.

Compaction Testing for the Pump Station

It is estimated that 25 compaction tests will be required for the foundations of the storage tank, chlorination facility, and pump station structure.

Concrete Testing

It is estimated that 100 concrete compressive strength tests will be required for structural concrete in the tank foundation and pump station structures.

Testing Cost

The cost per compaction test is estimated to be \$65. Using the estimated 500 tests, the estimated cost for compaction testing is about \$32,500.

The cost per concrete compressive strength is estimated to be \$100. Using the estimated 50 tests, the estimated cost for concrete compressive strength testing is \$10,000.

Task 8.7 - Operational Testing and Startup

Start up and testing of the well is estimated to take 1 day (12 hours with travel time) per well (5 wells) for a total of 60 hours for principal, senior, and associate engineers. Start up and testing of pumps, storage tank, and chlorination facility is estimated to take 3 days (12 hours with travel time) for a total of 36 hours for principal, senior, and associate engineers. Start up and testing of the SCADA system is estimated to take 2 days (12 hours with travel time) for a total of 24 hours of principal, senior, and associate engineers. Mileage and meals are assume to be \$200 per day.

	Principal Hours	Senior Hours	Associate Hours	Non-Labor Fee
Wells	60	60	60	\$1,000
Pump Station	36	36	36	\$600
SCADA	24	24	24	\$400
Total	120	120	120	\$2,000

Task 8.8 – Progress Pay Estimates

It is assumed that a progress pay estimate will be required each month for each construction contract. Assuming 22 months of construction and 2 construction contracts, 44 progress pay estimates will be required. It is estimated that each progress pay estimate will take 2 hours of principal time, 4 hours of senior time, 4 hours of clerical time, and \$25 in printing and postage.

Task 8.9 – Project Close Out

The project closes out costs have been estimated in the table below for all construction contracts.

	Principal Hours	Senior Hours	Associate Hours	CADD Hours	Clerical Hours	Non-Labor Fee
Record Drawings	40	80	40	100		\$500
Notice of Completion	4				4	\$25
Final Inspection	12	12	12			\$200
Finalize Project Files	20	40	80		40	
Total	76	132	132	100	44	\$725

Budget Category (g): Monitoring and Assessment

Task 9.1 – Monitoring and Assessment

Monitoring and Assessment is on-going over project life and costs associated with this task are considered as part of operation and maintenance and are not included in this portion of the budget.

Attachment 4 Exhibit
Project Budget

Project Budget

Water Supply Stabilization Program No. 2 (WSSP2)

AVEK

Task Description	Personnel Hours										Budget		
	Principal Engineer	Senior Engineer II	Senior Engineer I	Associate Engineer	Assistant Engineer	Const. Observer	CADD Supervisor	CADD Operator	Clerical	Total Hours	Labor	Non-Labor Fee	Total
Budget Category (a): Direct Project Administration Costs													
Task 1.1 - Project Management	378									378	\$ 75,600		\$ 75,600
Task 1.2 - Labor Compliance Program										-	\$ -	\$ 210,000	\$ 210,000
Task 1.3 - Reporting										-	\$ -	\$ 50,000	\$ 50,000
Subtotal	378	-	-	-	-	-	-	-	-	378	\$ 75,600	\$ 260,000	\$ 335,600
Budget Category (b): Land Purchase/Easement													
Task 2.1 - Preparation of Legal Descriptions	16		32	128			128		2	306	\$ 41,740	\$ 800	\$ 42,540
Task 2.2 - Easement Acquisitor										-	\$ -	\$ 85,000	\$ 85,000
Subtotal	16	-	32	128	-	-	128	-	2	306	\$ 41,740	\$ 85,800	\$ 127,540
Budget Category (c): Planning/Design/Engineering/Environmental Documentation													
Task Group 3 - Project Assessment and Evaluation													
Task 3.1 - Records Search	4	4	8	8	16		4		4	48	\$ 6,600		\$ 6,600
Task 3.2 - Topographic Survey										-	\$ -	\$ 30,000	\$ 30,000
Task 3.3 - Geotechnical Analysis										-	\$ -	\$ 60,000	\$ 60,000
Task 3.4 - Existing Utilities Search	14		20	36					4	74	\$ 11,320	\$ 500	\$ 11,820
Task 3.5 - Operational Plan and Hydraulic Analysis	20	40	30	40	30		20		10	190	\$ 28,300		\$ 28,300
Task 3.6 - Feasibility Study										-	\$ -	\$ 1,583,332	\$ 1,583,332
Task 4 - Permitting	20		40	40	20				20	140	\$ 19,800		\$ 19,800
Task Group 5 - Project Design												\$ 500	\$ 500
Task 5.1 - Recharge Basin Design	10		40	20	10		60	20		160	\$ 21,600		\$ 21,600
Task 5.2 - Recharge Pipelines Network Design	10		40	20	10		60	20		160	\$ 21,600		\$ 21,600
Task 5.3 - Recovery Well Design	20		78	50	28		117	59		352	\$ 46,780		\$ 46,780
Task 5.4 - Recovery Well Pipeline Network Design	38	12	88	25	12		118	57		350	\$ 48,640		\$ 48,640
Task 5.5 - Recovered Water Transmission Pipeline Design	112	38	264	77	38		356	173		1,058	\$ 146,840		\$ 146,840
Task 5.6 - Recovered Water Pump Station Design													
Subtask 5.6.1 - Civil Site Design	20	40	70	70	24		149	75		448	\$ 60,460		\$ 60,460
Subtask 5.6.2 - Structural Design	60	10	40	20	10		112	56		308	\$ 43,240		\$ 43,240
Subtask 5.6.3 - Mechanical Design	4	24	8				22	10		68	\$ 10,040		\$ 10,040
Subtask 5.6.4 - Electrical Design	60	40	30	20	14		112	56		332	\$ 47,520		\$ 47,520
Subtask 5.6.5 - Instrumentation Design	40	20	10	5	5		48	24		152	\$ 22,660		\$ 22,660
Subtask 5.6.6 - Landscape and Irrigation Design	8	10	10	10	6		20	10		74	\$ 10,520		\$ 10,520
Subtotal	440	238	776	441	223	-	1,198	560	38	3,914	\$ 545,920	\$ 1,674,332	\$ 2,220,252
Budget Category (d): Construction/Implementation													
Task 6.1 - Construction										-	\$ -	\$ 25,823,400	\$ 25,823,400
Subtotal	-	-	-	-	-	-	-	-	-	-	\$ -	\$ 25,823,400	\$ 25,823,400

Project Budget

Water Supply Stabilization Program No. 2 (WSSP2)

AVEK

Task Description	Personnel Hours										Budget		
	Principal Engineer	Senior Engineer II	Senior Engineer I	Associate Engineer	Assistant Engineer	Const. Observer	CADD Supervisor	CADD Operator	Clerical	Total Hours	Labor	Non-Labor Fee	Total
Budget Category (e): Environmental Compliance/Mitigation/Enhancement Task 7.2 - Implementation of Environmental Mitigation Measures, Monitoring and Assessment										-	\$ -	\$ 100,000	\$ 100,000
Subtotal	-	-	-	-	-	-	-	-	-	-	\$ -	\$ 100,000	\$ 100,000
Budget Category (f): Construction Administration													
Task 8.1 - Project Bids Solicitation	112		104	96			64		200	576	\$ 74,160	\$ 21,000	\$ 95,160
Task 8.2 - Pre-Construction Meeting	24		24							48	\$ 8,640	\$ 400	\$ 9,040
Task 8.3 - Response to RFI	55		110	220					110	495	\$ 67,100	\$ 1,375	\$ 68,475
Task 8.4 - Submittals	160		320	400					80	960	\$ 144,800	\$ 1,000	\$ 145,800
Task 8.5 - Construction Observation	50		200	100	50	4,080				4,480	\$ 490,400	\$ 34,000	\$ 524,400
Task 8.6 - Materials Testing										-	\$ -	\$ 186,000	\$ 186,000
Task 8.7 - Operational Testing and Startup	120		120	120						360	\$ 60,000	\$ 2,000	\$ 62,000
Task 8.8 - Progress Pay Estimates	88		176						176	440	\$ 58,080	\$ 2,200	\$ 60,280
Task 8.9 - Project Close Out	76		132	132				100	44	484	\$ 67,880	\$ 725	\$ 68,605
Subtotal	685	-	1,186	1,068	50	4,080	64	100	610	7,843	\$ 971,060	\$ 248,700	\$ 1,219,760
Total	1,519	238	1,994	1,637	273	4,080	1,390	660	650	12,441	\$ 1,634,320	\$ 28,192,232	\$ 29,826,552

Personnel Category	\$/HR
Principal Engineer	\$200.00
Senior Engineer II	\$180.00
Senior Engineer I	\$160.00
Associate Engineer	\$140.00
Assistant Engineer	\$120.00
Const. Observer	\$105.00
CADD Supervisor	\$120.00
CADD Operator	\$100.00
Clerical	\$70.00

Attachment 4 Exhibit
Construction / Implementation Cost Estimate

Antelope Valley - East Kern Water Agency
Water Supply stabilization Project No. 2
Construction / Implementation Cost Estimate (10% Design)

Item No.	Description	Unit	Quantity	Unit Price	Total Price
<i>1</i>	<i>Recharge Basins</i>				
	a Clearing, Stripping, Grubbing, and Earthwork	400 AC		\$2,500	\$1,000,000
	b Maintenance Road Construction	1 LS		\$450,000	\$450,000
	c Recharge Pipeline Connection to West Feeder	1 LS		\$197,000	\$197,000
	d Recharge Metering Turnout from West Feeder	2 EA		\$60,000	\$120,000
	e 18-inch Recharge PVC Pipelines	13,100 LF		\$80	\$1,048,000
	f Recharge Basin Valved Inlets	14 EA		\$10,000	\$140,000
				Subtotal	\$2,955,000
<i>2</i>	<i>Recovery Wells</i>				
	a Site Clearing Stripping, Grubbing, and Grading	1 LS		\$25,000	\$25,000
	b Chain Link Fencing and Gate	1000 LF		\$30	\$30,000
	c Well Drilling and Development	5 EA		\$270,000	\$1,350,000
	d Well Pump and Motor	5 EA		\$130,000	\$650,000
	e Well Discharge Steel Piping, Valves, and Appurtenances	5 EA		\$50,000	\$250,000
	f Well Electrical and Instrumentation Equipment	5 EA		\$80,000	\$400,000
				Subtotal	\$2,705,000
<i>3</i>	<i>Recovered Water Pipeline Network</i>				
	a 12-inch CML&C Steel Pipe	15,840 LF		\$110	\$1,742,400
	b 16-inch CML&C Steel Pipe	2,640 LF		\$150	\$396,000
	c 27-inch CML&C Steel Pipe	5,280 LF		\$200	\$1,056,000
	d 36-inch CML&C Steel Pipe	36,960 LF		\$225	\$8,316,000
				Subtotal	\$11,510,400
<i>4</i>	<i>Water Storage , Treatment, and Pumping Station</i>				
	a Clearing, Stripping, Grubbing, and Grading	1 LS		\$150,000	\$150,000
	b Chain Link Fencing and Gate	1,600 LF		\$30	\$48,000
	c 1 MG Steel Water Storage Tank	1 LS		\$1,200,000	\$1,200,000
	d CMU Block Building	1 LS		\$650,000	\$650,000
	e 24, 48, and 60-inch Steel Manifold Piping	1 LS		\$1,000,000	\$1,000,000
	h 48-inch Meter and Precast Concrete Vaults	2 EA		\$40,000	\$80,000
	i Wet well, Suction, and Discharge Piping, Assemblies	7 EA		\$350,000	\$2,450,000
	j Vertical Turbine Pump and Motors	4 EA		\$200,000	\$800,000
	k Variable Frequency Drives (VFDs)	4 EA		\$400,000	\$1,600,000
	l Chlorination System	1 LS		\$100,000	\$100,000
	m Surge Control System	2 EA		\$200,000	\$400,000
	n Pump Station Electrical and Instrumentation Equipment	1 LS		\$125,000	\$125,000
	o Site Landscaping and Irrigation	1 LS		\$50,000	\$50,000
				Subtotal	\$8,653,000
				Total	\$25,823,400

The above noted cost estimate has been prepared using bid tabulations of similar projects. These bid tabulations include unit costs which combine costs for labor, materials, and equipment and thus we feel prudent to use the same format as this is the basis of this cost estimate.